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EXAMINER

HALPERN, MARK

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* TROY MICHAEL RUNGE, LOUISE CYNTHIA ELLIS COE,  
MIKE THOMAS GOULET, RICARDO TORU NISHIHATA, and  
VERA MARIA SACON

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Appeal 2008-005691  
Application 09/800,645  
Technology Center 1700

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Decided: March 25, 2010

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Before ROMULO H. DELMENDO, JEFFREY T. SMITH, and  
LINDA M. GAUDETTE, *Administrative Patent Judges*.

DELMENDO, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from a final rejection of claims 1-6, 8-19, 22-33, and 77-79 (Appeal Brief filed September 7, 2007, hereinafter “Br.,” at 2; Final Office Action mailed January 18, 2007). We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

### STATEMENT OF THE CASE

Appellants’ invention relates to a method for applying chemical additives to pulp fibers (Specification, hereinafter “Spec.,” 2, ll. 34-35).

Claim 1 on appeal reads as follows:

1. A method for preparing a chemically treated pulp fiber comprising:
  - a) creating a fiber slurry comprising process water and pulp fibers;
  - b) transporting said fiber slurry to a web-forming apparatus of a pulp sheet machine and forming a wet fibrous web;
  - c) drying said wet fibrous web to a predetermined consistency thereby forming a dried fibrous web;
  - d) treating said dried fibrous web with an applied amount of a chemical additive thereby forming a chemically treated dried fibrous web containing chemically treated pulp fibers; and
  - e) dispersing the chemically treated pulp fibers of the chemically treated dried fibrous web in water and draining the water from the chemically treated pulp fibers, wherein said chemically treated pulp fibers retain from between about 10 to about 100 percent of the applied amount of said chemical additive.

(Claims App’x.)

The Examiner relied upon the following as evidence of unpatentability (Examiner's Answer mailed January 16, 2008, hereinafter "Ans.," 3):

Champaign	3,556,931	Jan. 19, 1971
Hansen	5,547,541	Aug. 20, 1996

Karine Saint-Cyr, Adsorption Kinetics of Dyes and Yellowing Inhibitors on Pulp Fibers (June 1999) (Master of Engineering thesis submitted for approval, McGill University, Montreal, Canada) (publication date and/or status unknown) (hereinafter "Saint-Cyr").

The Examiner rejected the claims as follows:

- I. Claims 1, 2, 4, 5, 8-19, 22, 23, 25, 27-33, and 77-79 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Hansen, with or without Saint-Cyr (Ans. 3-5); and
- II. Claims 3, 6, 24, and 26 under 35 U.S.C. § 103(a) as unpatentable over Hansen in view of Champaign (Ans. 5-6).

### ISSUE

With respect to the disputed limitation recited in claim 1 ("wherein said chemically treated pulp fibers retain from between about 10 to about 100 percent of the applied amount of said chemical additive"), the Examiner relies on Hansen (columns 19-20 and Figure 1) to assert that "[t]he sprayed additives in Hansen are chemically bound to the fibers by covalent or ionic bonds and are inherently retained in the claimed range . . . when exposed to a liquid, water . . . ." (Ans. 4). As supporting evidence, the Examiner relies primarily on certain selected portions of Saint-Cyr (Ans. 4-5). Both rejections are premised on this theory of inherency.

Appellants first point out that Saint-Cyr's relevance is unclear (Br. 3). Appellants then contend Hansen explicitly teaches that the chemicals (or particles), which are initially bonded to the fibers (by hydrogen bonding in the presence of a binder), dissolve when exposed to aqueous liquid, such as urine, and therefore no longer retained by the fibers (Br. 4).

Thus, the dispositive issue on appeal is:

Did the Examiner err in asserting inherency of the disputed claim limitation in Hansen without sufficient factual basis?

#### FINDINGS OF FACT ("FF")

1. Hansen discloses the treatment of fibers with water-soluble particles that form hydrogen bonds or coordinate covalent bonds with the fibers in the presence of a binder (col. 18, l. 66 to col. 21, l. 17).
2. Hansen teaches (col. 21, ll. 27-43; emphases added):

The listed particles are organic or inorganic compounds that are water soluble, yet have the ability to hydrogen bond. Water solubility is preferably high . . . . *This high solubility allows the particles to dissolve when exposed to aqueous liquids such as urine*, but the hydrogen bonding capacity allows them to adhere to the fibers in the presence of binder but in the absence of aqueous liquid during use by an end user after the manufacturing process is completed. While bound, the particles substantially retain a discrete particulate form instead of dissolving or fusing, *at least until they are exposed to an aqueous liquid*.
3. Hansen discloses that the fibrous materials may be cellulosic or synthetic fibers that are capable of hydrogen bonds with the

binder, while the particles are capable of forming hydrogen bonds or coordinate covalent bonds with the binder (col. 4, l. 66 to col. 5, l. 3).

4. Saint-Cyr's thesis was submitted to the faculty at McGill University and purports to explain the adsorption mechanism of two yellowing inhibitors and two dyes on pulp fibers (Abstract).
5. Saint-Cyr states that, depending on NaCl concentration and adsorbing group, the yellowing inhibitor adsorption was reversible or irreversible (45, 55).
6. Saint-Cyr also states that "toluidine blue tends to adsorb preferentially on the pulp, while brilliant yellow tends to remain in solution" (83, 95).

#### PRINCIPLES OF LAW

"To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently." *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997).

Inherency may not be established by mere probabilities or possibilities. *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999); *MEHL/Biophile Int'l Corp. v. Milgraum*, 192 F.3d 1362, 1365 (Fed. Cir. 1999).

## ANALYSIS

The Examiner's rejections are not well founded.

As pointed out by Appellants, the Examiner's reasoning lacks the factual foundation upon which to connect Saint-Cyr's studies with the teachings of Hansen. Saint-Cyr's studies are limited to two yellowing inhibitors and two dyes on pulp paper and even state that the chemicals may not adsorb on the pulp fiber depending on NaCl content and/or the bonding group (FF 4-6). The Examiner failed to explain how these studies are in any way relevant to the teachings of Hansen, which is directed to the use of certain water soluble particulates in combination with a binder for treating cellulosic or synthetic fibers (FF 1, 3). Indeed, Hansen explicitly teaches that the water soluble particulates would not be retained on the fibers when exposed to aqueous liquid (FF 2). Thus, the Examiner failed to establish a prima facie case of inherency with respect to the disputed claim limitation ("wherein said chemically treated pulp fibers retain from between about 10 to about 100 percent of the applied amount of said chemical additive").

The Examiner also relied on Champaigne, but this reference was not applied to cure the deficiency in the Examiner's theory of inherency.

For these reasons, we cannot uphold either of the stated rejections.

## CONCLUSION

On this record, we find that the Examiner erred in asserting inherency of the disputed claim limitation.

DECISION

The Examiner's decision to reject:

- I. Claims 1, 2, 4, 5, 8-19, 22, 23, 25, 27-33, and 77-79  
under 35 U.S.C. § 102(b) as anticipated by or, in the  
alternative, under 35 U.S.C. § 103(a) as obvious over  
Hansen, with or without Saint-Cyr; and
- II. Claims 3, 6, 24, and 26 under 35 U.S.C. § 103(a) as  
unpatentable over Hansen in view of Champaigne,

is reversed.

REVERSED

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